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UNIVATION TECHNOLOGIES LLC 5555 SAN FELIPE, SUITE 1950 HOUSTON, TX 77056			EXAMINER PASTERCZYK, JAMES W	
			ART UNIT 1755	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/026,171  
Filing Date: December 21, 2001  
Appellant(s): AGAPIOU ET AL.

**MAILED**  
AUG 25 2004  
**GROUP 1700**

Douglas W. Miller  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 6/10/04.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claim 13 has been canceled. This fact is found in Appellant's section X appendix.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Invention**

The summary of invention contained in the brief is deficient because it lacks any mention that each of the independent claims is drawn to a method for making a supported metallocene-containing catalyst or catalyst component with the common feature of the reaction between the metallocene-containing composition and the support material taking place at an elevated temperature, most broadly from 60 to 125 °C. In addition, it is not clear why the paragraph bridging pp. 2-3 is found in the "Summary of Invention" section instead of the "Argument" section, but nevertheless arguments of unexpected benefits found in this paragraph are not availing against prior art applied under 35 USC 102(b) as are found in this final rejection.

**(6) Issues**

The Appellant's statement of the issues in the brief is substantially correct. The changes are as follows: the rejections under 35 USC 112, second paragraph against claims 4, 5, 14 and 21 are withdrawn, hence Appellant's argument against them is moot. The 35 USC 102(b) rejection against claims 6, 7, 14, 15 and 18-20 is also withdrawn in favor of the obviousness rejection against these claims using the same prior art.

**(7) Grouping of Claims**

Appellant's statement that the claims stand or fall together is correct.

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

Razavi et al., WO 96/35729, published 11/1996 (Razavi I)

5,914,289

Razavi et al. (Razavi II)

6/1999

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

A. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Razavi I.

Claim 1 recites a method of making a supported metallocene compound comprising heating a composition comprising the metallocene to 75 to 125 °C, followed by combining the heated composition with a support material.

Razavi I discloses at p. 3, l. 19-35, a process for making a supported metallocene, the process comprising first reacting a metallocene with an alumoxane (also known as an aluminoxane, both being a family of oligomeric aluminum oxo alkyl compounds that are in a dynamic equilibrium among various size chains and rings in solution) at a temperature of 15-50 °C to activate the metallocene toward olefin polymerization, recovering the resulting product, reacting this product with a support at a temperature from 85-130 °C, then recovering this product as a dry solid.

As Appellants note, the temperature ranges for the combination step between the present claims and the prior art are not exactly coextensive. However, to the extent these ranges overlap,

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the prior art anticipates the present claims. In addition, since the present claims do not bar the presence of a metallocene activator with the metallocene itself, its presence in the prior art does not negate the applicability of this prior art to the present claims. Also, the present claims read broadly enough that the step of actually combining the support with the metallocene-containing composition is carried out at the elevated temperature, rather than the metallocene-containing composition merely being first heated and then combined with the support at any temperature, making the prior art process steps read on those of the present claim.

B. Claims 1-12, 14, 15 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi I.

The present claims are drawn to variations on the theme of adding a metallocene composition to a support material at an elevated temperature, e.g. first reacting the metallocene with an alumoxane activator at various temperatures, heating both the metallocene catalyst with or without its activator and the support before combining the two, using a broader temperature range to combine the various ingredients used in the present process claims. Although the temperatures to which the metallocene, support, and combination thereof are brought may be different according to the independent claims, dependent claim 11 recites that these temperatures may also be the same. Also, the present claims cover a broader temperature range at which the metallocene composition and support are combined than that disclosed in Razavi I. However, even though Appellants note that less reactor fouling (i.e. plugging of its interior surfaces and plumbing with polyolefin product) occurs with their temperatures, Razavi I discloses that this is a problem that it also sought to overcome (p. 2, l. 23-27), hence the results obtained by Appellants would have been obvious to one of ordinary skill at the time the invention was made.

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In addition, a longer reaction time or higher temperature between the metallocene and its activator would have naturally caused a more complete reaction between the two due simply to conventional kinetic laws of chemical reactions, resulting naturally in a higher catalyst activity. Finally, the present claims read broadly enough that the step of actually combining the support with the metallocene-containing composition is carried out at the elevated temperature, rather than the metallocene-containing composition merely being first heated and then combined with the support at any temperature, making the prior art process steps read on those of the present claims.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Razavi I with a reasonable expectation of obtaining a highly-useful method for making a supported metallocene catalyst with the expected benefit of higher catalyst activity with lesser reactor fouling.

C. Claims 1-12 and 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Razavi I in view of Razavi II.

The additional claims herein rejected add the limitation that the dried product resulting from these various heating steps is reslurried, preferably in mineral oil. However, Razavi II, in addition to having temperature ranges identical to those of Razavi I for its own combination steps (col. 4, l. 4-16), teaches that mineral oil may be used to slurry the product of the combination of the metallocene with the activator (col. 4, l. 41-50, l. 56-59). One of ordinary skill in the art would have recognized that reslurrying the supported product would have been conventional in order to have a liquid that may be metered into the polymerization reaction chamber in slurry phase olefin polymerizations, the slurring agent also being capable of

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shielding the activated catalyst from oxygen or water from the atmosphere, both of which react with any of the reagents present, be they metallocene, activator, or activated metallocene, thus destroying the polymerization ability of the catalyst.

It would have been obvious to one of ordinary skill in the art to apply the teaching of Razavi II to the disclosure of Razavi I with a reasonable expectation of obtaining a highly-useful method of making an olefin polymerization catalyst with the expected benefit of the catalyst causing less fouling in the polymerization reactor.

**(11) *Response to Argument***

Appellants' principle argument is that the temperature ranges between the prior art and the present claims for the step of combining the support with some other material are not exactly coextensive. However, as noted above, to the extent that these ranges overlap, anticipation results as long as the remaining limitations are met. It could in fact be argued that claims 8-12 are also anticipated by Razavi I depending on how one interprets these claims. Nevertheless, at least for claims 1-4 there is anticipation of these claims by Razavi I due to the overlap of the temperature range at which the support is combined with the composition comprising a metallocene.

Appellants next argue that even though there is overlap in these temperature ranges, the present claims demonstrate unobviousness over the prior art due to lower amounts of reactor fouling when using their catalysts. However, unexpected results are unavailing against anticipation rejections, and the allegedly unexpected results of the present claims in temperature ranges outside the disclosures of the prior art appear to be entirely expected since both Razavi I

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and II are motivated by the desire to have less reactor fouling without losing catalyst activity, the same results shown by Appellants.

In sum, either of Razavi I and II anticipate or render obvious the present claims sufficiently to bar patentability.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

J. Pasterczyk  
August 19, 2004



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